

Work Order ID 93348

93348

Page 1

November-19-12 8:56:30 AM

Item ID: D4150-1

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Arm

Start Date: 11/15/12 Start Qty: 20.00

20

Cust Item ID:

Required Date: 11/30/12 Req'd Qty: 20.00

20

Customer:

Reference:

Run Start

NR1

Approvals: Process Plan: PLJ

Date: 12-11-19

Tooling:

Date:

Stop

NR2

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4150	B

100 Cut blanks as per folio

0.00

100

Bandsaw

Memo

0.00

Jeaspa Bandsaw

3.950" LONG

PO 12/11/27

20 0

110

0.00

110

HAAS I

Memo

0.00

HAAS CNC vertical machine #1

MACHINE AS PER FOLI FA943 AND DWG

FOLIO REV: AA

DWG REV: B

DEBURR

20 0 2012-12-02 see/pa

November-19-12 8:56:30 AM

Item ID: D4150-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Arm

Start Date: 11/15/12 **Start Qty:** 20.00

20

Cust Item ID:

Required Date: 11/30/12 **Req'd Qty:** 20.00

20

Customer:

Reference:

Run Start *NR1*

Approvals: _____ **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop ***NR2***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

120	QC2- Inspect parts off machine FAI/FAIB	0.00	
120			20 0 2012-12-02 ste/BA
QC	Memo	0.00	
Quality Control			

130	QC8- Inspect parts - second check	0.00	
130			
QC	Memo	0.00	
Quality Control			

170	Identify as per dwg & Stock Location: <u>57145</u>	0.00	
170			
Packaging	Memo	0.00	<u>20</u> <u>12/17/04</u> JB
Packaging			

Work Order ID 93348

93348

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November-19-12 8:56:30 AM

Item ID: D4150-1

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Arm

Start Date: 11/15/12 Start Qty: 20.00

20

Cust Item ID:

Required Date: 11/30/12 Req'd Qty: 20.00

20

Customer:

Reference:

Run Start *NR1*

Approvals: Process Plan:

Date:

Tooling:

Date:

Stop *NR2*

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00

180

QC

Memo

0.00

Quality Control

12/12/15
ME
12-12-04

Picklist Print

November-19-12 8:56:30 AM

Page 1

Work Order ID: 93348

Parent Item: D4150-1

Parent Item Name: Arm

Start Date: 11/15/12

Required Date: 11/30/12

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP Rev:A 10.06.24 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M303B0.750X1.500 303 BAR .750" X 1.500"		Purchased	No			100	f	11.9900	0.333333	6.66666		PO 12/11/27	

Location

Loc Qty

Loc Code

MAT050

11.99

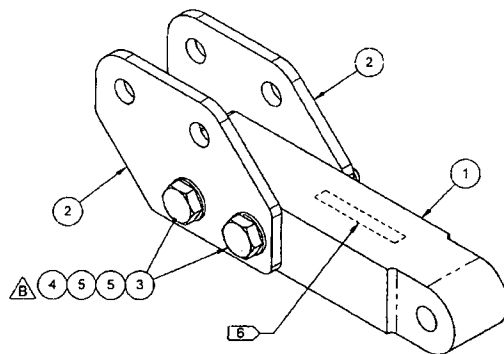
115047

0.32

122217

11.67

666



D4150-041 ATTACHMENT ARM ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4150-041" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.82 lbs

ITEM	QTY	P/N	DESCRIPTION
	X	D4150-041	ATTACHMENT ARM ASSY
1	1	D4150-1	ARM
2	2	D4150-3	ARM PLATE
3	1	AN3C13A	BOLT
4	1	MS21043-3	NUT
5	2	NAS1149C0332R	WASHER

SHOWN
FOR
ENCLOSURE
UNCONTROLLED
SUBJECT TO
WITHDRAWAL
WORK ORDER

93348 MCT
12-11-19

RELEASED
2010-07-16

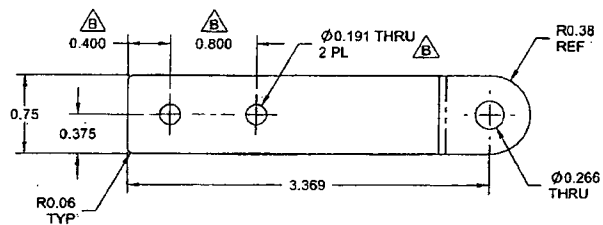
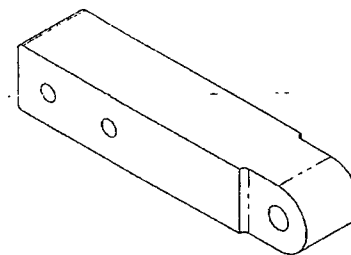
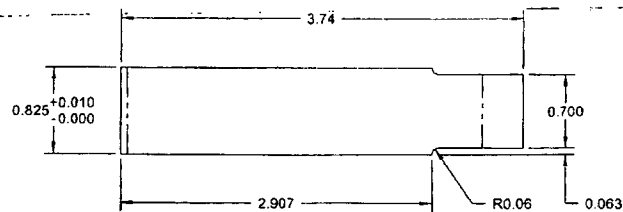
B	REPLACED QTY(3) MS20815-4M20 WITH QTY(2) EACH AN3C13A, MS21043-3 AND QTY(4) NAS1149C0332R WASHER (ZN D3-1) Ø0.191 2 PL REPLACES Ø0.129 3 PL (ZN C6-2, C7-2, B4-3 & B5-3) REASON: SEE TR-D350-607-2 REV. B	MB	10.07.08
A	NEW ISSUE	MB	10.06.18
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.07.08		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D4150** REV. B
SHEET 1 OF 3
TITLE **ATTACHMENT ARM ASSY** SCALE NTS

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3348



D4150-1 ARM

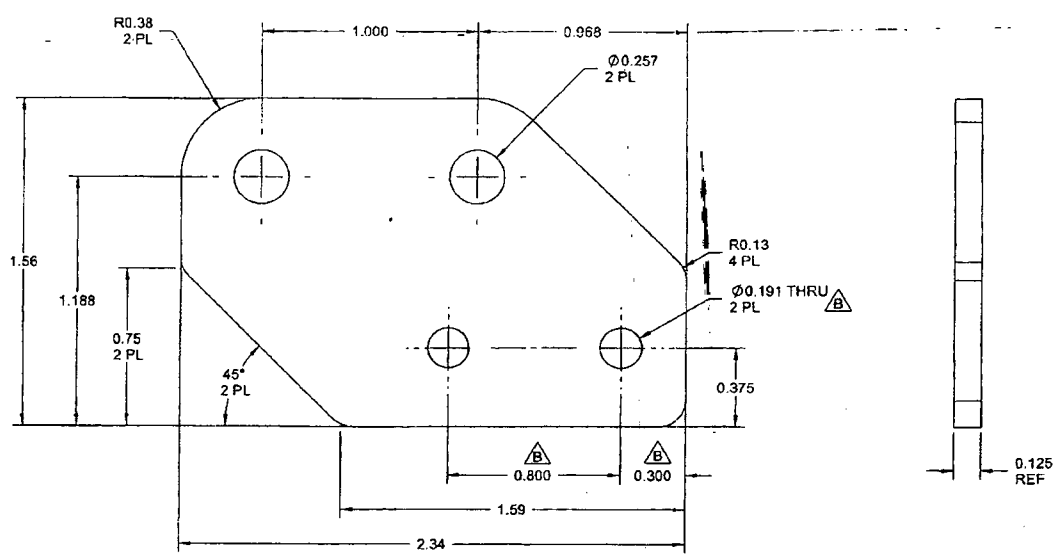
RELEASED
2010-07-16
MP

NOTES:

- 1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.60 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D4150	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		ATTACHMENT ARM ASSY	NTS
DATE	10.07.08	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD.</small>	

3348



D4150-3 ARM PLATE

RELEASED
2010-07-16

- NOTES:**
- 1) MATERIAL: 303/304/316 STAINLESS STEEL 0.125" THICK SHEET ANNEALED 2B FINISH, PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240 REF DART SPEC M304S11GA OR M303S11GA
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.10 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D4150	REV. B
MFG. APPR.			SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		ATTACHMENT ARM ASSY	NTS
DATE	10.07.08	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PROVIDED AS INFORMATION AND IS NOT TO BE USED FOR ANY PURPOSES OTHER THAN FOR WHICH IT WAS ORIGINALLY INTENDED WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

Date: 12/4/27
Supplier: THYOSLOWHAPP

Batch No: M122217
Dart P/O: 17047

Packing Slip: Yes ☒ No ☐
Invoice: Yes ☐ No ☒
Receipt: Cash ☐ Cr ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐
Waybill Attached: Yes ☐ No ☒
Shipment Complete: Yes ☐ No ☒ N/A ☐
QC6 Inspection OK 12/6/28 N/A ☐
Work Order ☐ N/A ☒

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments
M303B1000P30023			116	0	11	

Initials of receiver (if shipment OK) Level 12 [Signature]

Production/Admin: 12/4/27
Date [Signature]
Received/Costing [Signature]
Initial [Signature]

Location _____

Page 1 of 1

All amounts are calculated in domestic currency.

Grouped by Vendor ID

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID\Vendor Name		VC-COP001	Thyssenkrupp Materials CA Ltd								
PO17247	1		M303B1.000X03.000 f		6/27/2012	6/27/2012	11.6000	12' \$48.74	0.0000	0	\$565.33
CAD	No		303 BAR 1" X 3' f		23.0000	DESJ02		\$565.33	0.0000	0	
			122217								
	2		M303B0.750X1.500 f		6/27/2012	6/27/2012	24.0000	24'10" \$19.82	0.0000	0	\$475.61
	No		303 BAR .750" X f		24.0000	DESJ02		\$475.61	0.0000	0	
			1.500"								
			122217								
	3		M303B1.000X1.000 f		6/27/2012	6/27/2012	27.5000	\$12.68	0.0000	0	\$348.77
	No		303 BAR 1" X 1" f		24.0000	DESJ02		\$348.77	0.0000	0	
			122217								
	4		M304B0.750X2.500 f		6/27/2012	6/27/2012	26.5000	26' \$23.72	0.0000	0	\$628.49
	No		304 BAR .750 X 2.50 f		24.0000	DESJ02		\$628.49	0.0000	0	
			122217								

B I L L O F L A D I N G

No: PEC 773607

Ship From:
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 9057389033

Ship Date 25Jun12 at 12:06 From PFW
Probill
Via VIM TRANSFER
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7

Ship To: (1)
DART AEROSPACE
1270 ABERDEEN ST
HAWKESBURY, ON K6A 1K7
Tel: 613-632-9577 Fax: 613-632-1053

B I L L O F L A D I N G

1) Our Order PEC-463673- 1 Your PO # 17247
STAINLESS STEEL FLAT BAR 303CD
.750" X 1.50" X 144.0000"

Heat Number Tag No
A11732 79732

Quantity
24'10"
24 FT

PCS
2

MTR

Wt LBS
95

2) Our Order PEC-463673- 2 Your PO # 17247
STAINLESS STEEL SQ BAR 303 STAINLESS
1.00" X 165.0000"

Heat Number Tag No
A12008 79733

Quantity
27' 6.0000 "

PCS
2

MTR

Wt LBS
94

3) Our Order PEC-463673- 3 Your PO # 17247
STAINLESS STEEL FLAT BAR 304-L HRAP
.750" X 2.50" X 156.2500"

Heat Number Tag No
252919 79734

Quantity
26' .5000 "

PCS
2

MTR

Wt LBS
166

4) Our Order PEC-463673- 4 Your PO # 17247
STAINLESS STEEL FLAT BAR 303CD
1.00" X 3.00" X 138.0000"

Heat Number Tag No
A11817 79735

Quantity
11' 6.0000 "

PCS
1

MTR

Wt LBS
125

TOTAL: Tags 4 PCS 7 LBS 480

Heat Number
A11817

*** Chemical Analysis ***

Page: 1Continued

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ETRE
RAPPORTEES IMMEDIATEMENT

ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY

RETOUR DE MARCHANDISES AVEC NOTRE NUMERO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

JUN 27 2012

DATE

RECU EN BONNE CONDITIONS / RECEIVED IN GOOD CONDITION

TVA/GST# 1017327081 TQ001 TPS/GST TVH/HST # 140223034 RT0001

26-6-12
BPE Broche
APR 24 198 LBS
R-35 XG

B I L L O F L A D I N G

No: PEC 773607

Ship From:
THYSSENKRUPP MATERIALS NA
2821 LANGSTAFF ROAD
CONCORD, ONTARIO L4K 5C6
Tel: 905 669 9444 Fax: 9057389033

Ship Date 25Jun12 at 12:06 From PFW
Probill
Via VIM TRANSFER
FOB CONCORD
Frt PREPAID
Route 0- 0 Manifest
Vhcle Trailer
Slp STAN IVERS (905-532-1350)
Sold To: (20115)
DART AEROSPACE

Ship To: (1)
DART AEROSPACE

B I L L O F L A D I N G

MILL TEST REPORTS, PACKING SLIPS ARE TO SENT
WITH MATERIAL AND FAXED TO THE CUSTOMER PRIOR
TO SHIPPING.

ATTN: CHANTAL/LINDA

** ALL PACKING SLIPS MUST HAVE THE HEAT NUMBER **
** REFERENCED ON IT **

TOTAL (1-4) 4 BDLS GW. 486 LBS

*CUSTOMER PICK-UP HRS AT THYSSENKRUPP MATERIALS NA
CONCORD, ONT.* *** 9:00 AM TO 4:00 PM ***

**** TEL. 800-926-2600 ****

* WE STOCK STAINLESS STEEL *

* PLEASE LET US QUOTE YOUR NEXT REQUIREMENT *

***PLEASE NOTE A \$25.00 ENERGY SURCHARGE WILL BE
ADDED TO EVERY ORDER.***

Page: 2 Last

TOUTES ERREURS ET/OU MARCHANDISES MANQUANTES DOIVENT ÊTRE
RAPPORTÉES IMMÉDIATEMENT

ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY

RETOUR DE MARCHANDISES AVEC NOTRE NUMÉRO D'APPROBATION SEULEMENT
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NUMBER

JUN 27 2012



575 STATE FAIR BLVD.
SOLVAY, NY 13209

Certificate of Test

1

S
O
L
D
T
O
COPPER & BRASS SALES INC
22355 WEST ELEVEN MILE ROAD
SOUTHFIELD, MI 48034

S
H
I
P
T
O
COPPER & BRASS SALES
8001 THYSENKRUPP PARKWAY
NORTHWOOD, OH 43619

OUR ORDER NO.
P5-22725-1-01

DATE
11/02/11

CUSTOMER ORDER NO
5400109941-R02

CUSTOMER REQ NO

DISTRICT
L HINMAN

SHIPPED FROM
SYRACUSE

DESCRIPTION OF MATERIAL

CRU 303 CDA
ASTM-A582-05 AMS-5640U TYPE 2 ASTM-A484-11 ASTM-A320-11

SIZE

1.500 X .750 FLAT

HEAT NO.

A11732

C MN P S
.054 1.65 .033 .190

CHEMICAL ANALYSIS

SI NI CR MO CU
.60 9.17 17.41 .38 .59

QUANTITY HEAT NO.

1531 # A11732

MECHANICAL PROPERTIES

TENSILE PSI YLD.2%PSI %ELONG4D RED/AREA% HARDNESS
91,680 62,980 49.2 65.0 BHN 204/206

MATERIAL ANNEALED AT 1950 DEG. F. - WATER QUENCHED.
ELECTRIC FURNACE AOD MELTED

cmf
12/06/28

THANK YOU FOR SELECTING A QUALITY PRODUCT MELTED AND MANUFACTURED WITH PRIDE AT CRUCIBLE INDUSTRIES LLC LOCATED IN SOLVAY, NY 13209, USA. WE PROVIDE MATERIAL THAT IS FREE FROM MERCURY CONTAMINATION AND RADIATION AT THE TIME OF SHIPMENT. NO WELD REPAIR IS DONE. CRUCIBLE INDUSTRIES LLC HOLDS A CERTIFICATE OF REGISTRATION TO ISO 9001:2008, PRESSURE EQUIPMENT DIRECTIVE (PED) 97/23/EC 7/2 ANNEX 1, PARAGRAPH 4.3 AND WORKS UNDER THE GUIDELINES OF NCA 3800 USING QP MANUAL DATED 3/10/11. WE ARE COMPLIANT WITH EU DIRECTIVE 2002/95/EC (ROHS), REACH, EN 10204 2004 3.1, AND DFARS 252-225.7014 ALT1 & 225.7001, 7002 - 3 (b) (1) MATERIAL IS OF NAFTA ORIGIN. MATERIAL TESTING IS PERFORMED ON A PROLONGATION OF THE BAR, IN COMPLIANCE WITH INDUSTRY STANDARDS ASTM A370, E8, E10, E18, E23, E45, E112, E381, E804, E572, E1019, AND E1088. THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FEDERAL STATUTES, INCLUDING FEDERAL LAW, TITLE 18, CHAPTER 47. PRODUCTS, TECHNICAL DATA, TECHNOLOGY, AND SERVICES OF CRUCIBLE INDUSTRIES LLC ARE SUBJECT TO U.S. EXPORT CONTROLS UNDER THE APPLICABLE LAWS AND REGULATIONS OF THE UNITED STATES.

THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED ACCORDANCE WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH THE SPECIFICATION REQUIREMENTS.

CRUCIBLE INDUSTRIES LLC

CERTIFIED BY

William P. Mastroe

WILLIAM MASTROE - MANAGER QUALITY CONTROL & LABS

Page 1 of 1
From: Copper and Brass Sales

Cust: THYSENKRUPP MATERIALS NA - ECAD Del: 2401923078

Part: PO: PEC - 240085

Wgt: 95.000 LB Date: 06/20/2012

James K. Baber



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO17247

Purchase Order Date 6/18/12

PO Print Date 6/20/12

Page Number 1 of 2

Order From :

VC-COP001

THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275,POSTAL"A"
TORONTO, ON M5W 5V8
CA

Contact Name

Vendor Phone

Vendor Fax

Vendor Account Nbr

905 669 9444

905 738 9033

Buyer

Requisition Nbr

Tax Resale Nbr

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

Destination-Collect

Ship To :

DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAKED
6/20/12

e-mail

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	M303B1.000X03.000 as	303 BAR 1" X 3"	6/27/12 Yes	23.00 f	Yours ppd	\$50.4348	\$1,160.00
		Special Inst: MATERIAL: AISI 303 SS BAR AS PER ASTM A582					
		NOTE: AISI 304/316 NOT ACCEPTABLE					
2	M303B0.750X1.500 ooo	303 BAR .750" X 1.500"	6/27/12 Yes	✓ 24.00 f	Yours ppd	\$20.5083	\$492.20
		Special Inst: MATERIAL: AISI 303 SS BAR AS PER ASTM A582					
		NOTE: AISI 304/316 NOT ACCEPTABLE					
3	M303B1.000X1.000 as	303 BAR 1" X 1"	6/27/12 Yes	24.00 f	Yours ppd	\$13.1250	\$315.00
		Special Inst: MATERIAL: AISI 303 SS BAR AS PER ASTM A582					
		NOTE: AISI 304/316 NOT ACCEPTABLE					

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required YES NO

Change Nbr: 2

Change Date: 6/20/12



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO17247

Purchase Order Date 6/18/12

PO Print Date 6/20/12

Page Number 2 of 2

Order From :

VC-COP001

THYSSENKRUPP MATERIALS CA LTD
O/A VPK METAL- C/O T27540/PO BOX 4275,POSTAL"A"
TORONTO, ON M5W 5V8
CA

Contact Name

Vendor Phone 905 669 9444

Vendor Fax 905 738 9033

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

4	M304B0.750X2.500	304 BAR .750 X 2.50	6/27/12 Yes	24.00 f	Yours ppd	\$24.5438	\$589.05
---	------------------	---------------------	----------------	------------	-----------	-----------	----------

63

26-80

6/26/12

Special Inst: AISI 304/316 SS BAR OR AISI 304/316 SS
PLATE
PER ASTM A276 OR ASTM A240

NOTE:(303 NOT ACCEPTABLE)

PO Total:

\$2,556.25

MATERIAL CERTIFICATION
REQ'D UPON DELIVERY

Change Nbr: 2

Change Date: 6/20/12

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required ☒ YES ☐ NO